Name:

at1113exam: Expand, factor, and solve quadratics (v321)

1. Expand the following expression into standard form.

$$(5x + 7)(5x - 7)$$

$25x^2 - 35x + 35x - 49$

$25x^2 - 49$

2. Solve the equation.

$$(5x - 3)(7x + 2) = 0$$

$x = \frac{3}{5}$ $\quad$ $x = \frac{-2}{7}$

3. Expand the following expression into standard form.

$$(9x - 7)(2x - 5)$$

$18x^2 - 45x - 14x + 35$

$18x^2 - 59x + 35$

4. Expand the following expression into standard form.

$$(9x + 7)^2$$

$81x^2 + 63x + 63x + 49$

$81x^2 + 126x + 49$

5. Solve the equation.

$$8x^2 + 14x - 8 \;=\; 5x^2 - 3x - 2$$

$$3x^2 + 17x - 6 = 0$$
$$(3x - 1)(x + 6) = 0$$
$$x = \frac{1}{3} \qquad x = -6$$

6. Factor the expression.

$$x^2 + 10x + 24$$

$$(x + 4)(x + 6)$$

7. Factor the expression.

$$49x^2 - 16$$

$$(7x + 4)(7x - 4)$$

8. Solve the equation with factoring by grouping.

$$8x^2 + 12x + 10x + 15 \;=\; 0$$

$$(4x + 5)(2x + 3) = 0$$
$$x = \frac{-5}{4} \qquad x = \frac{-3}{2}$$